

**City of Belmont
Community Development
Permit Center**



**One Twin Pines Lane
Suite 110
Belmont, CA 94002**

Submittal Requirements for a Roof-Mounted Solar Photovoltaic Installation 10 kW or Less in One- and Two-Family Dwellings

This information bulletin is published to guide applicants through a streamlined permitting process for solar photovoltaic (PV) projects 10 kW in size or smaller. This bulletin provides information about application submittal requirements, plan review, required fees, and inspections.

1. Approval Requirements

- a) An Electrical permit is required to install a roof-mounted solar PV system with a maximum power output of 10 kW or less.
- b) Planning review is not required for solar PV installations of this size.
- c) Fire Department approval is not required for solar PV installations of this size.

2. Submittal Requirements (available at www.belmont.gov)

- a) Completed permit application form.
 - 1) Permit applications may be obtained electronically at www.belmont.gov;
 - 3) Permit applications may be submitted by facsimile at (650) 595-7479; or
 - 4) Permit applications can also be submitted to the City of Belmont, Permit Center, in person at One Twin Pines Lane, Suite 110, Belmont, CA 94002.
- b) Demonstrate compliance with the eligibility checklist for expedited permitting.
- c) A completed Standard Electrical Plan. The standard plan may be used for proposed solar installations 10 kW in size or smaller.

The electrical plan must include the following.

- *Locations of main service or utility disconnect*
- *Total number of modules, number of modules per string and the total number of strings*
- *Make and model of inverter(s) and/or combiner box if used*
- *One-line diagram of system*
- *Specify grounding/bonding, conductor type and size, conduit type and size and number of conductors in each section of conduit*
- *If batteries are to be installed, include them in the diagram and show their locations and venting*
- *Equipment cut sheets including inverters, modules, AC and DC disconnects, combiners and wind generators*
- *Labeling of equipment as required by CEC, Sections 690 and 705*
- *Site diagram showing the arrangement of panels on the roof or ground, north arrow, lot dimensions and the distance from property lines to adjacent buildings/structures (existing and proposed)*

- d) A roof plan showing roof layout, PV panels and the following fire safety items: approximate location of roof access point, location of code-compliant access pathways, PV system fire classification and the locations of all required labels and markings. Examples of clear path access pathways are available in the State Fire Marshal Solar PV Installation Guide.

<http://osfm.fire.ca.gov/pdf/reports/solarphotovoltaicguideline.pdf>.

- e) For non-qualifying systems, provide structural drawings and calculations stamped and signed by a California-licensed Civil or Structural Engineer, along with the following information.
- The type of roof covering and the number of roof coverings installed
 - Type of roof framing, size of members and spacing
 - Weight of panels, support locations and method of attachment
 - Framing plan and details for any work necessary to strengthen the existing roof structure
 - Site-specific structural calculations
 - Where an approved racking system is used, provide documentation showing manufacture of the rack system, maximum allowable weight the system can support, attachment method to the roof or ground and product evaluation information or structural design for the rack system

A simple list of criteria is provided in this Guidebook (Toolkit Document 5). A full explanation of the methods and calculations used to produce these criteria can be found in the Structural Technical Appendix for Residential Rooftop Solar Installations, which is available at

http://www.opr.ca.gov/docs/Solar_Structural_Technical_Appendix.pdf.

5) Plan Review

Building permit applications for small residential rooftop solar systems can be submitted in person to the Permit Center at One Twin Pines Lane, Suite 110, CA 94002 or submitted by facsimile at (650) 595-7479. Building permit applications for small residential rooftop solar systems will be plan checked in a timely manner; within three business days.

6) Fees

See City of Belmont Fee Schedule

7) Inspections

When the plans have been approved, the building permit to construct the solar installation has been issued, and the system has been installed, it must be inspected before final approval is granted for the solar system. On-site inspections can be scheduled by contacting the City of Belmont, Building Division Inspection Line by telephone at (650)-637-2914. Inspection requests are scheduled no more than two business days in advance. Except during peak inspection periods inspections can be expected to take place within two business days.

Permit holders must be prepared to show conformance with all technical requirements in the field at the time of inspection. The inspector will verify that the installation is in conformance with applicable code requirements and with the approved plans.

The inspection checklist provides an overview of common points of inspection with which the installer must be prepared to show compliance. Common inspection checklist items include the following.

- Number of PV modules and model number match plans and specification sheets number match plans and specification sheets.
- Array conductors and components are installed in a neat and workman-like manner.
- PV array is properly grounded.
- Electrical boxes are accessible and connections are suitable for environment.
- Array is fastened and sealed according to attachment detail.
- Conductor ratings and size match plans.
- Appropriate signs are properly constructed, installed and displayed, including the following.

- Sign identifying PV power source system attributes at DC disconnect
- Sign identifying AC point of connection
- Sign identifying switch for alternative power system
- Equipment ratings are consistent with application and installed signs on the installation, including the following.
 - Inverter has a rating as high as max voltage on PV power source sign.
 - DC-side overcurrent circuit protection devices (OCPDs) are DC rated at least as high as max voltage on sign.
 - Switches and OCPDs are installed according to the manufacturer's specifications (i.e., many 600VDC switches require passing through the switch poles twice in a specific way).
 - Inverter is rated for the site AC voltage supplied and shown on the AC point of connection sign.
 - OCPD connected to the AC output of the inverter is rated at least 125% of maximum current on sign and is no larger than the maximum OCPD on the inverter listing label.
 - Sum of the main OCPD and the inverter OCPD is rated for not more than 120% of the bus bar rating.

8) Contact Information

For additional information regarding this permit process, please review the Permit Center home page on the City of Belmont's website at www.belmont.gov or contact the Building Division at (650)-595-7422.